|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study, Year** | **Type of Study** | **Screening Test** | **Reference Standard** | **Setting** | **Screener** | **Age of Enrollees** | **N** | **Proportion With Condition** | **Subjects** |
| Jessa, 201282 Study 1 | Cross-sectional | 6-item Computer Vision screener (CVS) | "Gold standard eye exam," including computerized high-contrast visual acuity and low-contrast visual acuity tests | Community settings and optometrist offices, United Kingdom | Optometrist | ≥65 years (mean 77 years) | 180 | Cataract: 31.7% Significant refractive error: 39.4% Correctable visual loss: 58.3% Significant macular degeneration: 28.9% | 46% male 12% seen in community 10% no spectacles, 46.6% multifocal, 23.9% distance vision, 38.3% near vision |
| Jessa, 201282 Study 2 | Cross-sectional | 4-item Computer Vision screener (CVS) and Flip-chart Vision Screener (FVS) | "Gold standard eye exam," including computerized high-contrast visual acuity and low-contrast visual acuity tests | Community settings and optometrist offices, United Kingdom | Optometrist | ≥65 years (mean 77 years) | 200 | Cataract: 30.7% Significant refractive error: 30% Correctable visual loss: 51% Significant macular degeneration: 22.5% | 31% male 31.5% seen in community 15.5% no spectacles, 44.5% multifocal, 22.5% distance vision, 31.5% near vision |
| Swanson, 200983 | Cross-sectional | Minimum Data Set (MDS) Vision Patterns section | ETDRS chart | 17 nursing homes United States | Trained research staff | >55 years 60-69 years: 10.4% 70-79 years: 32.9% 80-89 years: 41.8% >90 years: 16.0% | 371 | Impaired visual acuity: 40.6% (151/371) | Mean age: 80.7 years Female sex: 80.6% Race: 73.3% white, 26.4% black, 0.3% Hispanic Mean MMSE: 20.9 Near visual acuity, better eye: 0.56 Near visual acuity, worse eye: 0.81 Distance visual acuity, better eye: 0.43 Distance visual acuity, worse eye: 0.64 |

|  |  |  |
| --- | --- | --- |
| **Study, Year** | **Sensitivity** | **Specificity** |
| Jessa, 201282 Study 1 | **High-contrast visual acuity (Va >0.19 LogMAR) CVS** Cataract: 86.0% (95% CI 74.2 to 93.7%) Refractive error: 76.1% (95% CI 64.5 to 85.4%) Correctable visual loss: 79.1% (95% CI 70.0 to 86.4%) AMD: 75.0% (95% CI 61.1 to 86.0%) **Low-contrast visual acuity (Va >0.39 LogMAR) CVS** Cataract: 79.0% (95% CI 66.1 to 88.6%) Refractive error: 69.0% (95% CI 56.9 to 79.5%) Correctable visual loss: 66.7% (95% CI 56.8 to 75.6%) AMD: 75.0% (95% CI 61.1 to 86.0%) **Optimal (high-contrast visual acuity >0.39 LogMAR or near visual acuity):** 79.5% (95% CI 71.5 to 85.7%) | **High-contrast visual acuity (Va >0.19 LogMAR) CVS** Cataract: 51.2% (95% CI 42.1 to 60.3%) Refractive error: 54.1% (95% CI 44.3 to 63.7%) Correctable visual loss: 60.0% (95% CI 48.0 to 71.2%) AMD: 50.0% (95% CI 41.0 to 59.0%) **Low-contrast visual acuity (Va >0.39 LogMAR) CVS** Cataract: 55.3% (95% CI 46.1 to 64.3%) Refractive error: 55.1% (95% CI 45.2 to 64.6%) Correctable visual loss: 58.7% (95% CI 46.7 to 69.9%) AMD: 56.3% (95% CI 47.2 to 65.0%) **Optimal (high-contrast visual acuity >0.39 LogMAR or near visual acuity):** 67.9% (95% CI 57 to 77.3%) |
| Jessa, 201282 Study 2 | **High-contrast visual acuity (Va >0.19 LogMAR) CVS** Cataract: 65.6% (95% CI 52.3 to 77.3%) Refractive error: 73.3% (95% CI 60.3 to 83.9%) Correctable visual loss: 64.7% (95% CI 54.6 to 73.9%) AMD: 62.2% (95% CI 46.5 to 76.2%) **FVS** Cataract: 57.4% (95% CI 44.1 to 70.0%) Refractive error: 63.3% (95% CI 49.9 to 75.4%) Correctable visual loss: 55.9% (95% CI 45.7 to 65.7%) AMD: 51.1% (95% CI 35.8 to 66.3%) **Low-contrast visual acuity (Va >0.39 LogMAR) CVS** Cataract: 63.9% (95% CI 50.6 to 75.8%) Refractive error: 70.0% (95% CI 56.8 to 81.2%) Correctable visual loss: 63.7% (95% CI 53.6 to 73.0%) AMD: 66.7% (95% CI 51.1 to 80.0%) **FVS** Cataract: 68.9% (95% CI 55.7 to 80.1%) Refractive error: 70.0% (95% CI 56.8 to 81.2%) Correctable visual loss: 70.6% (95% CI 60.7 to 79.2%) AMD: 62.2% (95% CI 46.5 to 76.2%) **Optimal cut-off (high-contrast visual acuity >0.19 LogMAR or near visual acuity):** 75.4% (95% CI 67.1 to 82.2%) | **High-contrast visual acuity (Va >0.19 LogMAR) CVS** Cataract: 59.7% (95% CI 51.1 to 67.9%) Refractive error: 60.7% (95% CI 52.1 to 68.9%) Correctable visual loss: 34.7% (95% CI 25.4 to 45.0%) AMD: 58.1% (95% CI 49.9 to 65.9%) **FVS** Cataract: 67.6% (95% CI 59.2 to 75.3%) Refractive error: 67.9% (95% CI 59.5 to 75.5%) Correctable visual loss: 72.5% (95% CI 62.5 to 81.0%) AMD: 78.7% (95% CI 71.4 to 84.9%) **Low-contrast visual acuity (Va >0.39 LogMAR) CVS** Cataract: 64.8% (95% CI 56.2 to 72.7%) Refractive error: 65.0% (95% CI 56.5 to 72.9%) Correctable visual loss: 70.4% (95% CI 60.3 to 79.2%) AMD: 63.9% (95% CI 55.8 to 71.4%) **FVS** Cataract: 63.3% (95% CI 54.7 to 71.3%) Refractive error: 70.0% (95% CI 61.7 to 77.5%) Correctable visual loss: 71.4% (95% CI 61.4 to 80.1%) AMD: 67.7% (95% CI 59.8 to 75.0%) **Optimal cut-off (high-contrast visual acuity >0.19 LogMAR or near visual acuity):** 69.2% (95% CI 58.3 to 78.4%) |
| Swanson, 200983 | 52% (95% CI 45% to 59%) | 75% (95% CI 68% to 82%) |

**Abbreviations:** AMD = age-related macular degeneration, CI = confidence interval, CVS = computer Vision screener, ETDRS = Early Treatment Diabetic Retinopathic Study, FVS = flip-chart vision screener, MDS = minimum data sets, MMSE = Mini-Metal State Examination.